

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

ILLUMINA, INC., et al.,
Plaintiffs,

v.

BGI GENOMICS CO., LTD, et al.,
Defendants.

**REDACTED – ORDER GRANTING
IN PART AND DENYING IN PART
MOTION TO STRIKE OPINIONS OF
DR. STEPHEN D. PROWSE**

Case No. [19-cv-03770-WHO](#)

Re: Dkt. Nos. 380, 381, 390, 403

Case No. 20-cv-01465-WHO

Re: Dkt. Nos. 410, 411, 423, 437

Defendants BGI Genomics Co., Ltd., BGI Americas Corp., MGI Tech Co., Ltd., MGI Americas, Inc., and Complete Genomics, Inc.’s (collectively, “BGI”) move to strike portions of plaintiffs Illumina Inc. and Illumina Cambridge Ltd.’s (collectively, “Illumina”) damages expert, Dr. Prowse’s report. For the reasons explained below, BGI’s motion to strike portions of the Prowse Report is GRANTED in part without prejudice and DENIED in part.

BACKGROUND

Illumina filed the complaint in this matter (“*Illumina I*”) on June 27, 2019. Dkt. No. 1. It alleges that BGI infringes U.S. Patent No. 9,410,200 (the “’200 Patent”) and 7,566,537 (the “’537 Patent”) (“Asserted Patents”) by selling its sequencers and related reagents. *Id.* ¶¶ 2, 33–44. It asserts that BGI’s sequencers infringe claim 1 of the ’537 Patent and claim 1 of the ’200 Patent. *Id.* ¶¶ 35, 37, 41. BGI filed counterclaims, alleging that Illumina’s DNA sequencing systems (“Accused Products”) infringe claims 1–3 and 5 of its ’984 Patent. Dkt. No. 94 (“First Amended Answer” or “FAA”) ¶ 10. This matter is related to *Illumina Inc., et al., v. BGI Genomics Co., Ltd., et al.*, Case No. 20-CV-1465 (N.D. Cal.) (“*Illumina II*”), in which Illumina alleges that BGI infringes different patents by making,

selling, and using a different set of products. Fact discovery closed on March 26, 2021 and expert discovery closed on May 28, 2021. *Illumina II*, Dkt. No. 249 at 2. On June 17, 2021, BGI filed a motion to strike the expert opinions of Illumina’s damages expert, Dr. Stephen Prowse. Dkt. No. 380 (“Mot.”).

LEGAL STANDARD

I. FEDERAL RULES

Under Federal Rule of Civil Procedure 12(f), “[t]he court may strike from a pleading an insufficient defense or any redundant, immaterial, impertinent, or scandalous matter.” FED. R. CIV. P. 12. Federal Rule of Evidence 702 allows a qualified expert to provide an opinion where:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods;
- and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

FED. R. EVID. 702.

Expert testimony is admissible under Rule 702 “if it is both relevant and reliable.” *See Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993). “[R]elevance means that the evidence will assist the trier of fact to understand or determine a fact in issue.” *Cooper v. Brown*, 510 F.3d 870, 942 (9th Cir. 2007). Under the reliability requirement, expert testimony must “relate to scientific, technical, or other specialized knowledge, which does not include unsubstantiated speculation and subjective beliefs.” *Id.* To ensure reliability, the court must “assess the [expert's] reasoning or methodology, using as appropriate such criteria as testability, publication in peer reviewed literature, and general acceptance.” *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir. 2010). These factors are “helpful, not definitive,” and a court has discretion to decide how to test reliability “based on the particular circumstances of the particular case.” *Id.* (internal quotation marks and footnotes omitted).

The inquiry into the admissibility of expert testimony is “a flexible one” where “[s]haky but admissible evidence is to be attacked by cross examination, contrary evidence, and attention to

the burden of proof, not exclusion.” *Id.* at 564. “When the methodology is sound, and the evidence relied upon sufficiently related to the case at hand, disputes about the degree of relevance or accuracy (above this minimum threshold) may go to the testimony’s weight, but not its admissibility.” *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 852 (Fed. Cir. 2010). The burden is on the proponent of the expert testimony to show, by a preponderance of the evidence, that the admissibility requirements are satisfied. FED. R. EVID. 702 advisory committee notes.

“Trial courts must exercise reasonable discretion in evaluating and in determining how to evaluate the relevance and reliability of expert opinion testimony.” *United States v. Sandoval-Mendoza*, 472 F.3d 645, 655 (9th Cir. 2006). A district court serves as “a gatekeeper, not a factfinder.” *Id.* at 654.

II. REASONABLE ROYALTY DETERMINATION

A patentee who prevails in an infringement action is entitled to “damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer.” 35 U.S.C. § 284. Where an established royalty does not exist, a court may determine a reasonable royalty based on a hypothetical negotiation between the parties. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 435 F.3d 1356, 1361 (Fed. Cir. 2006). The hypothetical negotiation is a legal construct that “attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began.” *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009). In other words, the “basic question” answered by a hypothetical negotiation is: “if, on the eve of infringement, a willing licensor and licensee had entered into an agreement instead of allowing infringement of the patent to take place, what would that agreement be?” *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 76 (Fed. Cir. 2012). While this analysis “requires sound economic and factual predicates,” *Riles v. Shell Exploration & Prod. Co.*, 298 F.3d 1302, 1311 (Fed. Cir. 2002), it also “necessarily involves an element of approximation and uncertainty,” *Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 274 F.3d 1371, 1385 (Fed. Cir. 2001).

In determining a reasonable royalty, experts often consider one or more of a non-exhaustive list of fifteen factors set forth in *Georgia-Pacific Corp. v. U.S. Plywood Corp.*,

318 F.Supp. 1116, 1120 (S.D.N.Y. 1970). The Federal Circuit “do[es] not require that witnesses use any or all of the *Georgia-Pacific* factors when testifying about damages in patent cases.” *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 31 (Fed. Cir. 2012). However, when one or more factors are used, “some explanation of both why and generally to what extent the particular factor impacts the royalty calculation is needed.” *Id.*

DISCUSSION

I. MOTION TO STRIKE

BGI moves to strike portions of Illumina’s damages expert Prowse’s opinions and testimony under Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). Prowse is an economist who specializes in “economic, financial, and damage quantification consulting services.” Dkt. No. 381-6 (“Prowse Report”) ¶ 9. Because the parties agree that BGI has not sold an Accused Product to any third party in the U.S., Prowse only opines on whether permanent injunctive relief is appropriate and the appropriate amount for a reasonably royalty of BGI’s allegedly infringing research and development (“R&D”) activities in the U.S. before the preliminary injunction in June 2020. Mot. at 2; Dkt. No. 391 (“Opp.”) at 2. In this motion, BGI moves to strike portions related to the reasonable royalty section. Mot. at 2.

In his report, Prowse determined that the expected reasonable royalty for BGI’s accused R&D activities in the U.S. is [REDACTED]. Prowse Rep. ¶ 216. He calculated this number by averaging two data points—[REDACTED] and [REDACTED]—and adding [REDACTED] because the *Georgia-Pacific* factors “are generally upward.” *Id.* The [REDACTED] data point is what Prowse concluded would be BGI’s expected return on its accused R&D activities in the U.S. based on BGI’s expected [REDACTED] return on investment capital. *Id.* ¶¶ 183, 214. The [REDACTED] data point is what Prowse concluded would be BGI’s benefit from performing its R&D in the U.S. based on the differential in World Intellectual Property Organization’s (“WIPO”) 2014 Innovation Output rankings for China compared to U.S. investment. *Id.* ¶ 215.

BGI contends that Prowse employs unreliable methodologies and offers unsupported opinions as evidenced by (1) his failure to account for the incremental benefit of the accused R&D; (2) his selective reliance on the 2014 WIPO Global Innovation Index to the exclusion of

1 data from subsequent years; (3) his failure to discount his lump sum royalty to its present value in
 2 2014 based on the time value of money; (4) his unsupported assumption that all of BGI's accused
 3 R&D activities that related to "DNBSEQ technology" infringed Illumina's Asserted Patents; and
 4 (5) his unjustified increase of his quantified reasonably royalty of [REDACTED] up to [REDACTED]
 5 on the basis that the *Georgia-Pacific* factors are "generally upward." Mot. at (i), 1–2. Illumina
 6 opposes and asserts that BGI's contentions go the weight, not the admissibility, of Prowse's
 7 opinions. Dkt. No. 404 ("Reply") at 1–2.

8 For the reasons explained below, BGI's motion to strike opinions related to Prowse's
 9 selective reliance on the 2014 WIPO Global Innovation Index and unjustified increase based on
 10 the *Georgia-Pacific* factors is GRANTED without prejudice. But BGI's motion to strike opinions
 11 related to Prowse's failure to account for the incremental benefit of the accused R&D, his failure
 12 to discount his lump sum royalty to its present value in 2014, and his conclusion that all of BGI's
 13 accused R&D activities that related to "DNBSEQ technology" infringed Illumina's Asserted
 14 Patents is DENIED.

15 **A. The [REDACTED] Data Point**

16 The first issue is whether Prowse's [REDACTED] data point is based on reasonable and
 17 reliable methodology. The Federal Circuit has "repeatedly held, the essential requirement for
 18 reliability under *Daubert* is that the ultimate reasonable royalty award must be based on the
 19 incremental value that the patented invention adds to the end product. In short, apportionment."
 20 *CSIRO v. Cisco Sys., Inc.*, 809 F.3d 1295, 1301 (Fed. Cir. 2015) (internal quotation marks and
 21 citation omitted). Prowse relied on BGI's R&D expenditure spreadsheets, which CGI's CFO
 22 Avanindra Chaturvedi, testified were "the best source of historical data on R&D expenditure" to
 23 calculate this data point. Prowse Rep. ¶ 179. Based on that analysis, Prowse "calculated the total
 24 amount specifically related to the Accused R&D spent in the U.S. from 2014 – 2020 to be [REDACTED]
 25 [REDACTED]." *Id.* ¶ 182. Prowse then applied the [REDACTED] rate of return to the accused R&D investment of
 26 [REDACTED] and concluded that "BGI would expect a return on this activity of [REDACTED]." *Id.* ¶ 183.

28 BGI contends that Prowse failed to consider the incremental benefit of conducting R&D

activities in the U.S. as opposed to China where there would be no infringement when determining his calculation of the [REDACTED] reasonable royalty and therefore his testimony should be excluded. Dkt. No. 381 at 6. BGI points out that although Prowse testified that he is not offering any expert opinion on whether BGI could have moved the accused R&D activity to China because he is not a technical expert, he concluded that based on evidence from “Illumina’s expert and from Defendants’ witnesses” doing research in China “would be very hard, if not impossible.” Dkt. No. 380-3 (“Prowse Tr.”) at 92:11-19. Prowse testified that the [REDACTED] data point was not the incremental return “because this data point assumes that doing the research in China is just not practically possible.” Prowse Tr. at 88:4–11. In other words, because “the accused R&D could not be reasonably done in China [] there[] [was] no point in doing an incremental analysis.” *Id.* at 88:12–17. Instead, the analysis for the [REDACTED] data point is where Prowse compared the benefit of conducting R&D activities in the U.S. Prowse Tr. at 88:16-17; Prowse Rep. ¶ 215. As a result, BGI contends that Prowse’s improper determination, as a non-technical expert, about the impossibility of moving the accused R&D activity to China and failure to conduct an incremental analysis warrants exclusion of this data point because Prowse’s methodology is unreliable.

But as Illumina asserts, Prowse relied on Illumina’s technical expert and employees to conclude that BGI would not see moving the accused R&D activity to China as an “acceptable alternative” and therefore Prowse’s methodology is proper.¹ Prowse Rep. ¶ 204; *see* Opp. at 5. First, Prowse relies on Illumina’s technical expert, Dr. Floyd Romesberg’s report, who indicated that “moving the Accused R&D operations out of the U.S. would not only be detrimental for the very reasons BGI chose to conduct R&D in the U.S., but it would be disruptive, costly and impact the KOL relationships and available U.S. based talent pool.” Prowse Rep. ¶ 190. Prowse admits, however, that Dr. Romesberg did not opine that it was impossible to move the R&D activities to China. Prowse Tr. at 96:17-97:2. But Prowse also relies on BGI’s Chief Scientific Officer at CGI

¹ In support of its argument, Illumina also emphasizes the inconsistency of BGI’s arguments: during the briefing for preliminary injunction, BGI argued that enjoining its infringing R&D work in its San Jose, CA facility would greatly harm its [REDACTED] investment in its products. Dkt. No. 391 at 1. Now, BGI insists that moving its entire R&D facility to China has been a “readily available non-infringing alternative.” Mot. at 1. According to Illumina, under *Daubert*, these discrepancies are for the jury to evaluate. Opp. at 1. I agree.

and MGI, Dr. Radoje Drmanac, who acknowledged the difference in R&D activity within and outside the U.S. when he declared,

“I do not consider scientists and research groups throughout the world to be fungible. Because ideas and research projects that scientists in the United States are working on can be, and frequently are, different from projects that other scientists are working on in other parts of the world, excluding U.S. scientists from evaluating CoolMPS will slow down its development and could lead to a product which is not as robust as it might otherwise be. This will likely set back the development of our technology worldwide.”

Prowse Rep. ¶ 190; *see* Dkt. No. 95-3 in Case No. 20-CV-1465 ¶ 23. Therefore, Prowse properly takes into consideration the incremental benefit—he reasonably and reliably determines that the incremental benefit is the total amount of BGI’s return on its investment in its infringing R&D work in the U.S. because BGI has no cost-effective alternatives.² Opp. at 9.

BGI responds that this evidence shows at best that “it may have been preferable for Defendants to conduct certain R&D activities in the U.S. . . . But nothing in the record supports Dr. Prowse’s assumption that it was impossible for Defendants to conduct the accused R&D outside of the U.S.” and therefore his subsequent decision not to conduct an incremental analysis is unsupported.³ Mot. at 7. But Prowse’s methodology is sound. He properly relied on Illumina’s technical expert and BGI’s own employees’ statements to determine that shifting the accused R&D activities out of the U.S. “was not a viable option for BGI.” *See* Prowse Rep. ¶ 190. “When the methodology is sound” as is the case here, “and the evidence relied upon sufficiently related to the case at hand, disputes about the degree of relevance or accuracy (above this minimum threshold) may go to the testimony’s weight, but not its admissibility.” *i4i Ltd. P’ship*, 598 F.3d at

² Illumina also argues that it is unlikely that there is an acceptable non-infringing alternative at the time of invention because there is evidence of willful infringement. Opp. at 9. But as BGI contends, Prowse does not discuss willful infringement as a factor for his conclusion, nor can he because he is not a technical expert. Reply at 4–5. The willful infringement claims are separate from Prowse’s opinions at issue here.

³ Illumina asserts that the standard for non-infringing alternatives is not one of impossibility but that the non-infringing alternative would have been more costly to BGI than Prowse’s damages. Opp. at 8 (citing *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1304 (Fed. Cir. 2015)). BGI does not dispute this standard but correctly points out that it is Prowse, not BGI, who determined that R&D activities in China were not practically possible. Reply at 2. Therefore, the question of whether there is evidence supporting Prowse’s conclusion of impossibility is applicable.

852. Accordingly, BGI's motion to strike any opinions related to Prowse's failure to account for the incremental benefit of the accused R&D is DENIED.

B. The [REDACTED] Data Point

The second issue is whether Prowse's methodology in using the 2014 WIPO index is reliable. BGI contends that in Prowse's calculation of the value of R&D in the U.S. as compared to China between 2014 and 2020, Prowse cherry-picked data from 2014 that best supported his conclusion that R&D in the U.S. is more valuable than in China. Mot. at 1.

The WIPO Global Innovation Index "provides detailed metrics about the innovation performance of countries and economies around the world." Prowse Rep. ¶ 198. Prowse quantifies the alleged benefit that BGI receives from conduct R&D activities in the U.S. by comparing the innovation output scores contained in the 2014 WIPO Index for the U.S. and China. Prowse Rep. ¶¶ 198–205. He opines that the benefit would be [REDACTED], assuming equal investment dollars in the U.S. and China. He calculates this amount by multiplying the 10.4% differential in 2014—the output score for the U.S. in 2014, according to the WIPO Index was 10.4% higher than that of China—to the alleged [REDACTED] in BGI's expenditures for allegedly infringing R&D activity from 2016–2020. Prowse Rep. ¶ 202.

BGI argues that even though Prowse acknowledged that the output score changed throughout the relevant time period, he only applied the 2014 differential to all R&D expenditures from 2016–2020, thereby improperly increasing this data point for damages. *Id.* at 8. In other words, because Prowse only used the 2014 differential, he failed to consider that China's innovation output score improved towards the end of 2016–2020. Mot. at 3–4. In fact, "the 2019 scores even *favor*[ed] China such that the differential was a negative number." *Id.* at 4. Had Prowse "applied the index differential for the actual year in which the R&D expenditures were incurred, this 'data point' would be only [REDACTED] less than the [REDACTED]" Prowse uses, according to BGI. *Id.* at 8. Even applying the average differential from 2014–2020 would result in [REDACTED] less than [REDACTED]. *Id.*

During his deposition, Prowse explained that he did not use the other differentials because the change was "largely due to developments in industries that don't have anything to do with

sequencing or biopharma in general.” Prowse Tr. at 109:17–110:11; *see also* Prowse Tr. 110:12–111:6 (Prowse explaining that “it doesn’t really make much sense to be using Innovation index numbers that I know are being driven by things that are not even related to sequencing, let alone biopharma . . . It didn’t fit the facts and circumstances of this case.”). Specifically, Prowse disregarded the 2018–2020 innovation output scores because the narrowing was attributable to allegedly irrelevant factors such as investment in China through major companies like Huawei, record-level growth of intellectual property filings in 2016 in China, and the contribution of “banking/financial services and mobile” to China’s “improved output score.” Prowse Rep. ¶ 203.

But Prowse does not explain how R&D investments by Huawei, increased patent filings, or the contribution of banking/financial/mobile services justify Prowse ignoring the post-2014 differentials. In fact, some of Prowse’s citations to the WIPO index reports do not indicate that China’s improved output scores from 2018–2020 were due to these factors. For example, the page of the 2020 Index on which Prowse relies to assert that China’s improved output score in 2020 was due to financial and mobile services, only depicts a figure showing the “Top 25 global brands, by value and origin, 2020.” Dkt. No. 380-6. BGI also points out that patent applications are an indicator of “knowledge creation,” one of the metrics used by WIPO to calculate a country’s innovation score. Reply at 7. Therefore, “[i]f an increase in knowledge creation in China is somehow considered an unreliable indicator of the value of innovation, as Dr. Prowse suggests is the case for 2018, then Dr. Prowse’s reliance on the WIPO innovation output scores altogether is unreliable.” *Id.*

Further, Prowse, as an economist, has no expertise to allow him to opine on the “relative importance of the individual outputs that contribute to a country’s overall innovation output score, which include patent applications, scientific & technical articles, computer software spending, high tech exports, trademark applications, creative goods exports, monthly Wikipedia edits, and video uploads on YouTube.” Opp. at 7; *see* Prowse Rep. ¶ 200. Illumina asserts that Prowse is an expert in the field of economics and is “qualified to analyze the factors that drive a country’s economy, the same factors that inform the WIPO Global Innovation Index.” Opp. at 13. But even if Prowse had the expertise, he did not explain what the impact of the biopharma industry or DNA

1 sequencing is on China’s innovation output score in any given year. Mot. at 9. Therefore,
 2 “[a]bsent any consideration of the relative impact of the biopharma industry on the innovation
 3 output scores, which again he has no expertise to opine on in any event, Dr. Prowse’s general
 4 attribution of the narrowing of the output score difference to other industries is entirely
 5 unsupported and untethered from the facts of the case.” *Id.*

6 Illumina argues that BGI’s contentions go to weight and not admissibility because BGI
 7 only “nitpicks the data that [Prowse] relies on” and “does not contend that using the WIPO Index
 8 is an unreliable methodology.” Opp. at 12. Illumina further argues that it is reasonable for
 9 Prowse to use the 2014 WIPO differential because 2014 is the year Prowse assumed the parties
 10 would have entered into a hypothetical negotiation. *Id.* Illumina is correct that under Federal
 11 Circuit precedent, post-infringement evidence is not required to determine the reasonable royalty
 12 during the hypothetical negotiation; however, it is also not precluded. *See Odetics, Inc. v. Storage*
 13 *Tech. Corp.*, 185 F.3d 1259, 1276–77 (Fed. Cir. 1999) (holding that while use of
 14 post-infringement evidence in a hypothetical negotiation analysis is permissible, it is not required).
 15 BGI persuasively asserts that “if the 2016–2020 R&D expenditure data can be used as a source for
 16 the 2014 hypothetical negotiations, so too can the 2016–2020 WIPO differentials.” Reply at 6; *see*
 17 Prowse Tr. at 66:10–13 (“You know, there’s no reason for [] Kearl [BGI’s damages expert] or I to
 18 ignore the actual R&D expenditures that actually occurred. We know they occurred with
 19 certainty. We don’t want to close our eyes to that.”).

20 Accordingly, BGI’s motion to strike Prowse’s testimony related to his reliance on the 2014
 21 WIPO Index to the exclusion of data from subsequent years is GRANTED without prejudice. He
 22 will need to better explain the basis for this opinion—e.g., how the WIPO indexes indicate that
 23 other factors improved China’s output scores and why that justifies ignoring the post-2014
 24 differentials, especially if there is no discussion about the impact of the biopharma industry or
 25 DNA sequencing on China’s innovation output score—or revise it—e.g., apply the post-2014
 26 differentials—in order to testify about it.

27 C. Time-Value of Money

28 The third issue is whether Prowse reliably uses actual infringing R&D expenditures to

1 calculate the lump sum royalty or whether he violates the hypothetical negotiation construct and
 2 ignores the time-value of money. The Federal Circuit has held, when discounting a future income
 3 stream to present value, “the discount rate performs two functions: (i) it accounts for the time
 4 value of money; and (ii) it adjusts the value of the cash flow stream to account for risk.” *Energy*
 5 *Cap. Corp. v. United States*, 302 F.3d 1314, 1333 (Fed. Cir. 2002). BGI asserts that Prowse failed
 6 to account for the time value of money in his one-time, lump sum royalty payable in 2014 because
 7 Prowse did not discount the R&D expenditures from 2016–2020 to 2014 dollars. Reply at 9.
 8 According to BGI, Prowse improperly “treats *all* the R&D expenditures from 2016 onwards as if
 9 they were spent in 2014” and “assumes that the associated expected *returns* for this activity from
 10 2016–2020 . . . as if they would have been achieved years earlier in 2014 as well.” *Id.* (emphasis
 11 in original).

12 In response, Illumina argues that “[i]t is common practice for damages experts to consider
 13 actual use, just as Dr. Prowse has, under *Georgia-Pacific* factor 11, which is ‘the extent to which
 14 the infringer has use of the invention; and any evidence probative of the value of that use.’” Opp.
 15 at 15; *see e.g., Lucent Techs. v. Gateway*, 580 F.3d 1301, 1333–34 (Fed. Cir. 2009) (citation
 16 omitted) (“Consideration of evidence of usage after infringement started can, under appropriate
 17 circumstances, be helpful to the jury and the court in assessing whether a royalty is reasonable.
 18 Usage (or similar) data may provide information that the parties would frequently have estimated
 19 during the negotiation.”). Prowse explained that he did not need to discount the R&D
 20 expenditures to 2014 dollars because “if you know what actually happened after the hypothetical
 21 negotiation, there’s no reason to discount for uncertainty or risk that amount back to the
 22 hypothetical negotiation.” Prowse Tr. at 65:24–66:13.

23 Although Illumina explains that there is no need to discount for risk, BGI complains that
 24 Illumina does not explain why there is no need to discount for the time value of money. *See* Reply
 25 at 9–10. Further, BGI rejects Prowse’s argument that it did not need to account for the time value
 26 of money in his lump sum royalty because it would be acceptable to do so for a running royalty.⁴

27
 28 ⁴ BGI also contends that Prowse provides no basis as to why “BGI would have agreed in 2014 to a
 lump sum royalty payment for a license that would end in 2020 and subject them to a patent

Mot. at 14; *see* Prowse Tr. at 205:3–24 (“[T]he license is based on an extent of use, and so far the extent of use has been through June of 2020. . . . It’s just the same as a running royalty on sales.”). Contrary to Prowse’s statements during his deposition, he explicitly opines in his report that “the parties would have agreed to a one-time lump sum payment for the Accused R&D activity prior to the preliminary injunction as opposed to an ongoing, running royalty.” Prowse Rep. ¶¶ 155–56. Moreover, the Federal Circuit has recognized, “[s]ignificant differences exist between a running royalty license and a lump-sum license,” and “[c]ompared to a running royalty analysis, a lump-sum analysis involves different considerations.” *Lucent Techs.*, 580 F.3d at 1326.

Nevertheless, BGI’s contentions about the accuracy of Prowse’s calculation due to Prowse’s failure to consider the time value of money goes to weight and not admissibility. Prowse’s methodology for calculating BGI’s R&D expenditures is sound under Rule 702. Accordingly, BGI’s motion to strike the two data points based on the issue of time value of money is DENIED.

D. Inflation of R&D Expenditures

The fourth issue is whether Prowse improperly inflates the expenditures for accused R&D activity by, for example, including BGI’s core technology called DNBSEQ as infringing on Illumina’s Asserted Patents. To calculate BGI’s R&D expenditures, Prowse relies on a spreadsheet, which included various line items for categories of R&D (“Spreadsheet”). Prowse Rep. ¶ 179. The Chief Financial Officer of CGI and MGI Tech, Avanindra Chaturvedi, testified that the Spreadsheet is “the best source of historical data on R&D expenditures.” Dkt. No. 390-21 (“Chaturvedi Tr.”) at 395:17–18. BGI asserts that because Prowse is not a technical infringement expert, he has “no reliable basis to establish that the line items he *did* include involved infringing uses of Illumina’s patents.” Mot. at 14 (emphasis in original). But Illumina contends that Prowse merely relied on its technical expert Romesberg’s analysis of infringing R&D activities and the testimony of two CGI employees, Chaturvedi and Drmanac. Opp. at 18. Prowse testified that he

holdup.” Reply at 10. Illumina only argues that “[b]ecause Prowse’s license is based on actual use, it necessarily stopped when the use stopped, i.e., the preliminary injunction.” Opp. at 17. But again, this conflates the running royalty and lump sum royalty forms of relief.

1 “investigated” Chaturvedi’s deposition to see “how he characterized the line items,” “relied on
2 deposition testimony from Drmanac with regards to the nature of the R&D that they were doing
3 that was accused,” and “relied on Mr. Romesberg for his understanding – or his opinion with
4 regards to the R&D activities that were infringing.” Prowse Tr. at 82:23–83:24.

5 BGI acknowledges that it is proper for a damages expert to rely on technical knowledge
6 communicated to him or her by a technical expert but asserts that Prowse did not rely on technical
7 experts or BGI employees to include certain line items in his calculation. Reply at 11. BGI also
8 points to Prowse’s inclusion of R&D activities on products that are not listed in Illumina’s
9 definition of Accused Products as further evidence that Prowse improperly included irrelevant line
10 items on the Spreadsheet. Reply at 12. For example, BGI argues that Prowse assumed that all of
11 BGI’s DNBSEQ technology were infringing even though “[n]ot all aspects of the DNBSEQ
12 technology are accused of infringement in this case.” Mot. at 15–16.

13 That said, Prowse’s methodology is proper because Prowse relied on Romesberg and CGI
14 employees such as Chaturvedi who BGI designated as its 30(b)(6) corporate representative on
15 R&D expenditures. Chaturvedi had explained that two tabs on the Spreadsheet were “the specific
16 R&D expenses identified to these projects that were recorded in the books of Complete
17 Genomics.” Prowse Rep. ¶ 181. When asked whether there were any expenses in one tab of the
18 Spreadsheet unrelated to the DNBSEQ technology, Chaturvedi responded that he did not “see any
19 reason to exclude any of it directly.” Prowse Rep. ¶ 181. According to Chaturvedi, the DNBSEQ
20 technology “was incorporated into all of the sequencing instruments that were launched by
21 BGI/MGI.” *Id.* Based on this testimony, Prowse assumed that all R&D activities related to
22 DNBSEQ technology were infringing. Therefore, the extent of infringing R&D expenditures is a
23 question of weight not admissibility and BGI can cross-examine Prowse on the issue of including
24 certain R&D expenditures. Opp. at 18. Accordingly, BGI’s motion to strike opinions related to
25 Prowse’s alleged inflation of his R&D expenditures calculation is DENIED.

26 **E. Weighing of *Georgia-Pacific* Factors**

27 The final issue is whether Prowse’s method of averaging two data points and adding on
28 [REDACTED] is unreliable. In paragraph 216 of the Prowse Report, Prowse concludes that “the

1 average apportioned amount of a reasonable royalty” based on the two aforementioned data points
 2 “is [REDACTED]” and “[c]onsidering the *Georgia-Pacific* factors are generally upward, I conclude
 3 the royalty the parties would agree to for use of the Patents-in-Suit for the Accused R&D activity
 4 in the U.S. to be [REDACTED].” Prowse Rep. ¶ 216. BGI asserts that this final calculation is
 5 problematic because (1) Prowse “provides no explanation as to why the parties at the hypothetical
 6 negotiation would average these two ‘data points’ at all”; and (2) Prowse “provides no substantive
 7 explanation for why the parties would have agreed to a [REDACTED] boost to the lump sum
 8 royalty.” Mot. at 18. I agree. During his deposition, when asked, “Where is the math that gets
 9 you from 20.5 million to 25 million?” Prowse responded that, “[i]t’s not required” and that there
 10 was no need to provide a specific quantification of each *Georgia-Pacific* factor. Prowse Tr. at
 11 195:22–196:8; 196:19–197:8.

12 Although “mathematical precision is not required, some explanation of both why and
 13 generally to what extent the particular [*Georgia-Pacific*] factor impacts the royalty calculation is
 14 needed.” *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 31 (Fed. Cir. 2012). Illumina
 15 argues that Prowse’s analyses are proper because they are based on two separate methodologies,
 16 each reliable, that provide different ways of measuring the benefits.⁵ Opp. at 22. But even if
 17 Prowse’s methodologies were reliable, Illumina’s arguments are unpersuasive because they
 18 merely reiterate how Prowse calculated the two data points but do not explain why Prowse
 19 averaged the two data points or why Prowse added another [REDACTED] to the average in his final
 20 calculation. *See* Prowse Rep. ¶¶ 213–16. Prowse has “state[d] that [certain factors] support[ed] a
 21 ‘higher’ [reasonable royalty] rate, but he offered no explanation of how much the rate should have
 22 been increased,” and therefore his opinion is unsupported and unreliable. *See Whitserve, LLC v.*
 23 *Computer Packages, Inc.*, 694 F.3d 10, 30 (Fed. Cir. 2012). Accordingly, BGI’s motion to strike

24
 25 ⁵ Illumina argues that it is appropriate to use a range of reasonable royalties. Mot. at 23 (citing
 26 *Corning Optical Comm’ns Wireless Ltd. v. Solid, Inc.*, No. 14-CV-03750-PSG, 2015
 27 WL 5655192, at *3 (N.D. Cal. Sept. 24, 2015)). BGI does not dispute that courts have allowed
 28 there to be “more than one reliable method for estimating a reasonable royalty.” *See id.* But BGI
 correctly points out that *Corning Optical* is distinguishable, because in this case Prowse
 “performed a series of basic but baseless calculations to arrive at a *single* final royalty number.”
 Reply at 15.

opinions related to Prowse's unjustified increase of his quantified reasonable royalty of [REDACTED] up to [REDACTED] is GRANTED without prejudice. He needs to explain why averaging was appropriate and why and how he decided to add [REDACTED] to the total.

II. MOTIONS TO SEAL

The parties have filed three administrative motions to seal. Dkt. Nos. 381, 390, 403.⁶ A party seeking to seal court records must overcome a strong presumption in favor of the public's right to access those records. *See Ctr. for Auto Safety v. Chrysler Grp., LLC*, 809 F.3d 1092, 1096 (9th Cir. 2016), *cert. denied sub nom. FCA U.S. LLC v. Ctr. for Auto Safety*, 137 S. Ct. 38 (2016). The Ninth Circuit imposes the "compelling reasons" standard on most motions to seal, which requires a court to explain its findings "without relying on hypothesis or conjecture." *Ctr. for Auto Safety*, 809 F.3d at 1096–97. What constitutes a compelling reason is "left to the sound discretion of the trial court." *Nixon v. Warner Commc'ns, Inc.*, 435 U.S. 589, 599 (1978). However, the Ninth Circuit has highlighted that examples include "the use of records to gratify private spite, promote public scandal, circulate libelous statements, or release trade secrets," *Kamakana v. City & Cty. of Honolulu*, 447 F.3d 1172, 1179 (9th Cir. 2006), or as "sources of business information that might harm a litigant's competitive standing." *Ctr. for Auto Safety*, 809 F.3d at 1097. For the reasons explained in the table below, the first administrative motion to seal is GRANTED in part and DENIED in part and the other two motions are GRANTED. *See* Dkt. Nos. 381, 390, 403 in Case No. 19-CV-03770 and 411, 423, 437 in Case No. 20-CV-01465. BGI may file a redacted version of Dkt. No. 382-1 in conformity with this order within 14 days of the date of this order.

Document	Portion(s) Sought to be Sealed	Ruling
Dkt. Nos. 381 in Case No. 19-CV-03770 and 411 in Case No. 20-CV-01465 GRANTED IN PART and DENIED IN PART		
Defendants' Motion To Strike and Exclude Opinions of Dr. Stephen D. Prowse	Highlighted portions	GRANTED (Discusses BGI's trade secrets and confidential information)

⁶ The identical motions to seal in *Illumina II* are at Dkt. Nos. 411, 423, 437.

		related to BGI's R&D and finances. <i>See</i> Dkt. No. 381 ¶ 6.)
Exhibit A – Expert Report of Dr. Stephen D. Prowse and Exhibits Thereto	Entire document	GRANTED IN PART and DENIED IN PART (Granted only as to the text that contains BGI's confidential financial information, R&D expenditures, and valuations of certain BGI entities. <i>See</i> Dkt. No. 381 ¶ 10. There are portions of the report that do not require sealing, e.g., descriptions of the patents, background about the DNA sequencing industry, etc. <i>See</i> Dkt. No. 382-1.)
	Pages 24-27, ¶¶ 47-49, 51 in full Page 26, portions of ¶ 50 Page 42, portions of ¶ 88 Pages 44-45, portions of ¶ 90 Pages 45-46, portions of ¶ 91 Pages 47-48, portions of ¶ 94 Page 49, portions of ¶ 96 Pages 58-59, portions of ¶ 113 Page 59, portions of ¶ 114 Page 61, portion of ¶ 117 Page 62, portions of ¶ 120 Page 64, portions of ¶ 123 Pages 78-79, portions of ¶ 159 Page 82, portions of ¶ 164 Page 103, portion of ¶ 208 Exhibit 4 to The Expert Report of Stephen D. Prowse, Ph.D., CFA, PDF pages 134-143	GRANTED (Discusses Illumina's confidential, non-public information regarding Illumina's financial, sales, and pricing data, as well as marketing and business development information. <i>See</i> Dkt. No. 382.)
Exhibit B – Excerpts from the May 20, 2021 deposition transcript of Dr. Stephen D. Prowse	Highlighted portions	GRANTED (Discusses BGI's confidential financial information, R&D expenditures, and valuations of certain BGI entities. <i>See</i> Dkt. No. 381 ¶ 10.)
Exhibit C – Excerpts from the April 8, 2021 deposition transcript of Avanindra Chaturvedi	Highlighted portions	GRANTED (Discusses valuations, corporate restructuring, and highly confidential R&D expenditures.

		See Dkt. No. 381 ¶ 11.)
Exhibit D – Spreadsheet of R&D Expenditures	Entire document	GRANTED (Contains R&D expenditures for certain BGI entities for 2014–2020. See Dkt. No. 381 ¶ 9.)
Exhibit F – Exhibit 5.1 to the 05/10/21 Rebuttal Expert Report of Dr. James R. Kearl	Entire document	GRANTED (Contains R&D expenditures for certain BGI entities for 2014–2020. See Dkt. No. 381 ¶ 9.)
Exhibit I – CGI’s 2020 Profit & Loss Statement	Entire document	GRANTED (Contains highly confidential, non-public financial information, such as R&D expenditures. See Dkt. No. 381 ¶ 9.)
Dkt. Nos. 390 in Case No. 19-CV-03770 and 423 in Case No. 20-CV-01465		
GRANTED		
Plaintiffs’ Opposition to Defendants’ Motion to Strike and Exclude Opinions of Dr. Stephen D. Prowse	Green highlighted portions	GRANTED (Contains confidential information including internal discussions about BGI’s product development, commercialization, and R&D. See Dkt. No. 393 ¶ 6.)
Ex. 1: Deposition of Stephen D. Prowse, Ph. D.	Highlighted portions of pages 87-90, 92-94, 96	GRANTED (Contains confidential information such as BGI’s R&D expenditures and investment figures. See Dkt. No. 393 ¶ 6.)
Ex. 2: Deposition of James R. Kearl, Ph.D.	A portion of page 97	GRANTED (Contains Illumina’s confidential, non-public sales, revenue, and investment figures as well as confidential information related to Illumina’s third-party licensing agreements. See Dkt. No. 390 ¶ 5.)
Ex. 3: Deposition of Avanindra Chaturvedi, Volume 1	Highlighted portions of page 204	GRANTED (Contains confidential information such as BGI’s R&D expenditures and investment figures. See Dkt. No. 393 ¶ 6.)
Ex. 4: CGI Production Document, CGI002863796-CGI002863802	Highlighted portions of CGI002863796-797	GRANTED (Contains confidential information including internal discussions about BGI’s product development, commercialization, and R&D. See

		Dkt. No. 393 ¶ 6.)
Ex. 5: CGI Production Document, CGI000230809-CGI000230811	Entire Document	GRANTED (Contains confidential information including internal discussions about BGI's product development, commercialization, and R&D. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 6: Deposition of S. Drmanac (March 17, 2021)	Entire Document	GRANTED (Contains confidential information including internal discussions about BGI's product development, commercialization, and R&D. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 7: CGI Production Document, CGI002298789-CGI002298793	Entire Document	GRANTED (Contains confidential information including internal discussions about BGI's product development, commercialization, and R&D. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 9: Opening Expert Report of James R. Kearl	Yellow highlighted portions of pages 30-31 and 40	GRANTED (Contains Illumina's confidential, non-public sales, revenue, and investment figures as well as confidential information related to Illumina's third-party licensing agreements. <i>See</i> Dkt. No. 390 ¶ 5.)
	Green highlighted portions of page 31	GRANTED (Contains confidential information including internal discussions about BGI's product development and investment figures. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 10: Deposition of Avanindra Chaturvedi, Volume 2	Highlighted portions of pages 299-302	GRANTED (Contains confidential information including internal discussions about BGI's product development, commercialization, and R&D. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 12: Deposition of Brock Peters	Highlighted portion of page 31	GRANTED (Contains confidential information including internal discussions about BGI's product development. <i>See</i> Dkt. No. 393 ¶ 6.)
Ex. 13: Deposition of R. Drmanac	Highlighted portions of pages 196-199	GRANTED (Contains confidential information including internal discussions about BGI's product development,

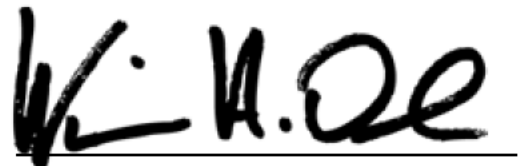
		commercialization, and R&D. <i>See</i> Dkt. No. 393 ¶ 6.)
Dkt. Nos. 403 in Case No. 19-CV-03770 and 437 in Case No. 20-CV-01465		
GRANTED		
Defendants' Reply	Highlighted portions	GRANTED (Contains confidential information regarding BGI's R&D expenditures. <i>See</i> Dkt. No. 403 ¶ 4.)

CONCLUSION

For the reasons explained above, BGI's motion to strike portions of the Prowse Report is GRANTED in part without prejudice and DENIED in part. Prowse may amend by August 16, 2021 and, if desired by BGI, shall sit for a deposition of two hours on or before August 30, 2021.

IT IS SO ORDERED.

Dated: July 23, 2021



William H. Orrick
United States District Judge